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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/884,837

06/19/2001

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SEA9774  
(30874.106USU1)

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EXAMINER

LE, MINH

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/884,837

Applicant(s)

NATH ET AL.

Examiner

Minh Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14;21-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14;21-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### **Claim Rejections - 35 USC § 102**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 12-14 and 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kajitani (U.S.P 6,057,983).

As per claim 1, Kajitani teaches in Fig. 4 a reduced lubricant accumulating slider, the slider comprising a first air bearing surface 14, a second air bearing surface 15, a center portion 29 located at least partially between the first air bearing surface 14 and the second air bearing surface 15, a first streamline control element 16 located at least partially between the first air bearing surface 14 and the center portion 29, and a second streamline control element 19 located at least partially between the second air bearing surface 15 and the center portion 29, wherein the first streamline control element and the second streamline control element function to reduce lubricant accumulation (Summary).

As per claim 12, Kajitani teaches in Fig. 4 a reduced lubricant accumulating slider comprising streamline control means for limiting

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stagnation and flow reversal (flow adjusting means for reducing the different air pressure in Summary).

Kajitani teaches a stream control means 42, 44 to adjust the air flow as to the negative pressure generating efficiency (col. 6, lines 53-63). Thus, the generation of the liquid dust and the adhesion thereof can be suppressed.

As per claim 21, Kajitani teaches in Fig. 4 a reduced lubricant accumulating slider, of the type used in a disk drive, the slider comprising first and second oppositely disposed air bearing land surfaces 14, 15, a lowered area between the first air bearing land surface and the second air bearing land surface 19, a center air bearing land surface 26 arranged and configured with a portion extending between the first air bearing land surface 14 and the second air bearing land surface 15, a first streamline control element 16 having a first portion located between the first air bearing land surface 14 and the center land surface 28, and a second portion located in the lowered area, and a second streamline control element 19 having a first portion located between the second air bearing land surface 15 and the center land surface 29, and a second portion located in the lowered area, wherein the first streamline control element and the second streamline control element function to reduce lubricant accumulation (Summary).

As per claim 2, Kajitani teaches in Fig. 4 the reduced lubricant accumulating slider of claim 1, wherein the center portion comprises a center air bearing surface 26.

As per claim 3, Kajitani teaches in Fig. 4 the reduced lubricant accumulating slider of claim 1, further comprising a third streamline control element 12 in contact with the first air bearing surface 14 and a fourth streamline control element 13 in contact with the second air bearing surface 15.

As per claim 4, Kajitani teaches in Fig. 4 the reduced lubricant accumulating slider of claim 1, further comprising a recessed area 29 between the first air bearing surface 14 and the second air-bearing surface 15.

As per claim 5, Kajitani teaches in Fig. 4 the reduced lubricant accumulating slider of claim 4, wherein each of the streamline control elements 12, 13, 16, 19 comprises an element that is raised above a surface of the recessed area 28, the element being less than or equal in height to the first and second air bearing surfaces 14, 15 (col. 5, lines 22-38).

As per claim 13, Kajitani teaches in Fig. 4 a reduced lubricant accumulating slider comprising first air bearing means 14 for providing lift to the slider at operational velocity, second air bearing means 15 for providing lift to the slider at operational velocity, and center transducer means 26 for housing a transducer 30 (Fig. 5).

As per claim 14, Kajitani teaches in Fig. 4 a reduced lubricant accumulating slider, wherein the streamline control means comprises a first streamline control element 16 located in a recessed area 28 defined in part by the first air bearing means 14 and the center transducer means 26 and a

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second streamline control element 19 located in a recessed area defined 29 in part by the second air bearing means 15 and the center transducer means 26.

As per claim 22, Kajitani teaches in Fig. 4 the reduced lubricant accumulating slider, further comprising a third streamline control element 12 cooperatively connected to the first air bearing land surface 14 and a fourth streamline control element 13 cooperatively connected to the second air bearing land surface 15.

As per claim 23, Kajitani teaches in Fig. 4 the reduced lubricant accumulating slider, wherein the first and second streamline control elements 16, 19 are raised above a mean plane 29 generally defined by a surface of the lowered area and are less than or equal in height to the first and second air bearing land surfaces 14, 15 (col. 5, lines 22-38).

As per claim 24, Kajitani teaches in Fig. 4 a reduced lubricant accumulating slider, wherein the third and fourth streamline control elements 12, 13 are raised above a mean plane 29 generally defined by a surface of the lowered area and are less than or equal in height to the first and second air bearing land surfaces 14, 15 (col. 5, lines 22-38).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to

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which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-11 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajitani in view of Boutaghou et al. (USP 6,055,127).

As per claim 7, Kajitani teaches the reduced lubricant accumulating slider in Fig. 4, wherein the third air bearing surface 24 and the center air bearing surface 26 are positioned at opposite ends of the slider, the center air bearing surface being positioned beyond ends of the first and second air bearing surfaces 14,15 that are opposite to the third air bearing surface 24.

As per claim 8, Kajitani teaches the reduced lubricant accumulating slider in Fig. 4, wherein the first and second streamline control elements 16, 19 each have a first end that is positioned in relation to the center air bearing surface 26 and a second end that extends beyond the center air bearing surface 26 towards the third air bearing surface 24.

As per claim 9, Kajitani teaches the reduced lubricant accumulating slider in Fig. 4, wherein the first ends of the first and second control elements 16, 19 each conform to a shape of the center air bearing surface 26.

As per claim 10, Kajitani teaches the reduced lubricant accumulating slider in Fig. 4, wherein the second ends of the first and second control elements 16, 19 are arranged and configured such that a distance between the first and second control elements 16, 19 increases as a distance to the third air bearing surface 24 decreases.

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As per claim 11, Kajitani teaches the reduced lubricant accumulating slider in Fig. 4, wherein the second ends of the first and second control elements 16, 19 are arranged and configured such that a distance between the first and second control elements 16, 19 decreases as a distance to the third air bearing surface 24 decreases.

As per claim 26, Kajitani teaches the reduced lubricant accumulating slider, wherein the first and second control elements are arranged and configured such that a distance between the first and second control elements decreases as a distance to the third air bearing land surface decreases

As per claim 6, Kajitani teaches a third air-bearing surface 24 in Fig. 4.

Kajitani does not the first air bearing surface and the second air-bearing surface are bridged by the third air bearing surface.

Boutaghou teaches in Fig. 4 the reduced lubricant accumulating slider 36 having a third air bearing surface 84, wherein the first air-bearing surface 58 and the second air bearing surface 57 are bridged by the third air-bearing surface 84.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to modify the slider of Kajitani, wherein the first air-bearing surface and the second air bearing surface are bridged by the third air bearing surface, in order to create a pressure area which forces the slider closer to the disc surface.



As per claim 25, Kajitani teaches a third air bearing land surface 24 in Fig. 4.

Kajitani does not teach the first air bearing land surface and the second air bearing land surface are connected at an end of the first and second air bearing land surfaces by the third air bearing land surface.

Boutaghou teaches in Fig. 4 the reduced lubricant accumulating slider 36 having a third air bearing surface 84, wherein the first air-bearing surface 58 and the second air bearing surface 57 are bridged by the third air bearing surface.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to modify the slider of Kajitani wherein the first air bearing land surface and the second air bearing land surface are connected at an end of the first and second air bearing land surfaces by the third air bearing land surface, in order to create a pressure area which forces the slider closer to the disc surface.

### ***INQUIRIES***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Le whose telephone number is (703) 305-7867. The examiner can normally be reached on 10:00AM - 7:00PM (Mon- Fri).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The

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fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3718 for regular communications and (703) 305-3718 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

ML  
June 16, 2003

  
HOA T. NGUYEN  
SUPERVISORY PATENT EXAMINER  
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6/16/03